

Active Learning 2 Proposal

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Deep Learning – 14448001
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Topic



E Scooter Helmet Problem

Topic

한국일보

공유킵보드 63% '노헬멧'... 안전모 구비 책임은 누구에게?



해럴드 경제

한 밤 '거리의 무법자' 킵보드...헬멧 규제 '1년만에 유명무실'

뉴스핌

전동킵보드 헬멧 의무화 실효성 '글쎄'..."단속도 쉽지 않아"

[학과사무실]공지사항 >

공유 퍼스널모빌리티 교내 이용금지 안내



행정조교 김의진 카페스텝 1:1 채팅

2022.04.28. 09:00 조회 129

댓글 0 URL 복사

교내 구성원의 안전을 위하여 공유 퍼스널모빌리티 교내 이용을 금지하고자 하오니 학교 구성원들의 적극적인 협조를 부탁드립니다.

1. 시행내용 : 공유 퍼스널모빌리티 교내 이용 금지

※ 퍼스널모빌리티 : 전기를 동력으로 하는 1인용 이동수단(전동킵보드, 세그웨이 등)

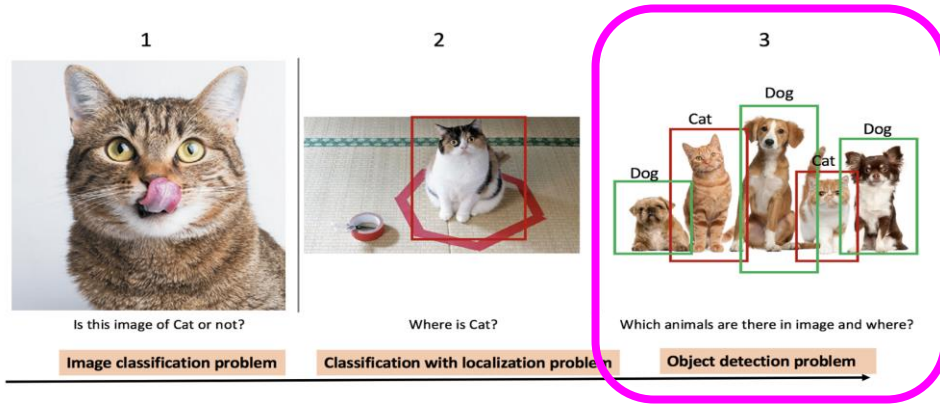
2. 시행기간 : 2022학년도 5월 이후 전면 금지

3. 시행사유

- 이용자 운전미숙으로 인한 빈번한 사고 발생
- 교내 도로 협소 및 자전거 도로 미비
- 교내 급경사 도로가 킵보드 주 이용도로로 방지턱 및 요철로 인한 사고 위험
- 안전장구 미착용으로 인한 안전사고의 위험
- 도로교통법상의 적용법규 미준수 운행 다수
- 차도 및 주차장 불법주차로 인한 사고 위험

Repository

How? -> Object Detection



<https://github.com/ultralytics/yolov5>

YOLOv5 by 



Result on training



Image to be used for Object Detection

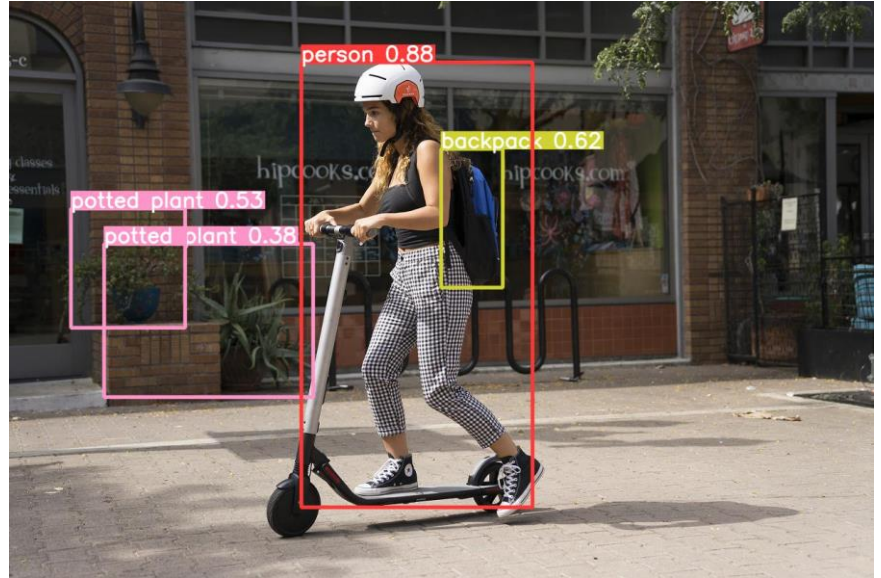


AI doesn't seem to detect e scooters, detected them as bicycle.

Result on training



Image to be used for Object Detection



AI doesn't seem to detected people without helmet.

Execution of the code (Tutorial Code)

Setup Code

Setup

Clone repo, install dependencies and check PyTorch and GPU.

```
11 !git clone https://github.com/ultralytics/yolov5 # clone
%cd yolov5
%pip install -qr requirements.txt # install
```

```
import torch
import utils
display = utils.notebook_init() # checks
```

YOLOv5 v6.1-208-g15057d2 Python-3.7.13 torch-1.11.0+cu113 CUDA:0 (Tesla T4, 15110MiB)
Setup complete (2 CPUs, 12.7 GB RAM, 38.7/78.2 GB disk)

```
!python detect.py --weights yolov5s.pt --img 640 --conf 0.25 --source data/images
display Image(filename='runs/detect/exp/kickboard.jpg', width=600)
```

detect: weights=[yolov5s.pt], source=data/images, data=data/coco128.yaml, imgsz=[640, 640], conf_thres=0.25, iou_thres=0.45, ms
YOLOv5 v6.1-208-g15057d2 Python-3.7.13 torch-1.11.0+cu113 CUDA:0 (Tesla T4, 15110MiB)

Fusing layers...

YOLOv5s summary: 213 layers, 7225885 parameters, 0 gradients

image 1/1 /content/yolov5/data/images/kickboard.jpg: 480x640 1 person, 3 bicycles, 1 car, 2 traffic lights, 1 handbag, Done. (0.017s)

Speed: 0.5ms pre-process, 16.7ms inference, 1.2ms NMS per image at shape (1, 3, 640, 640)

Results saved to **runs/detect/exp**



Detection code

Schedule (Dataset Collection Plan)

Dataset Collection - 200 sheets

/ 100 sheets

YouTube Yandex Google

Photo Taken
by ourself

Dataset Augmentation - 1000 sheets

/ 500 sheets

Albumentations

pypi package 1.1.0 CI passing

Albumentations is a Python library for image augmentation. Image augmentation is used in deep learning and computer vision tasks to increase the quality of trained models. The purpose of image augmentation is to create new training samples from the existing data.

Schedule (Dataset Collection Plan)

Dataset Labeling

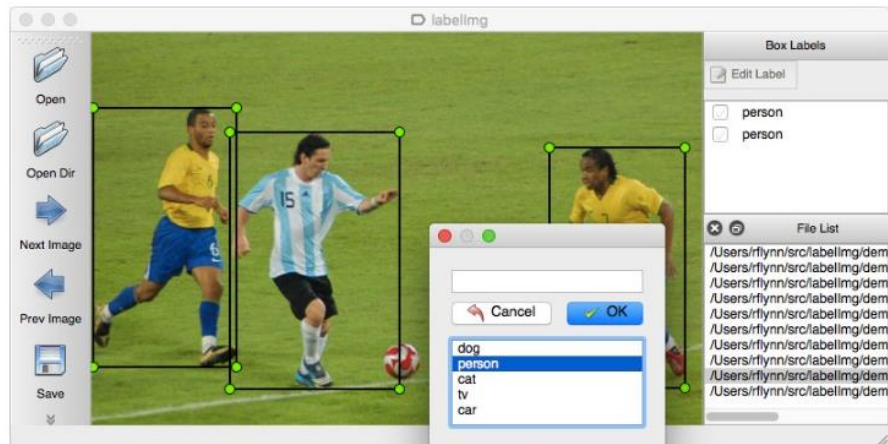
Labellmg

pyth v1.8.6 build passing lang en lang zh
lang zh-TW

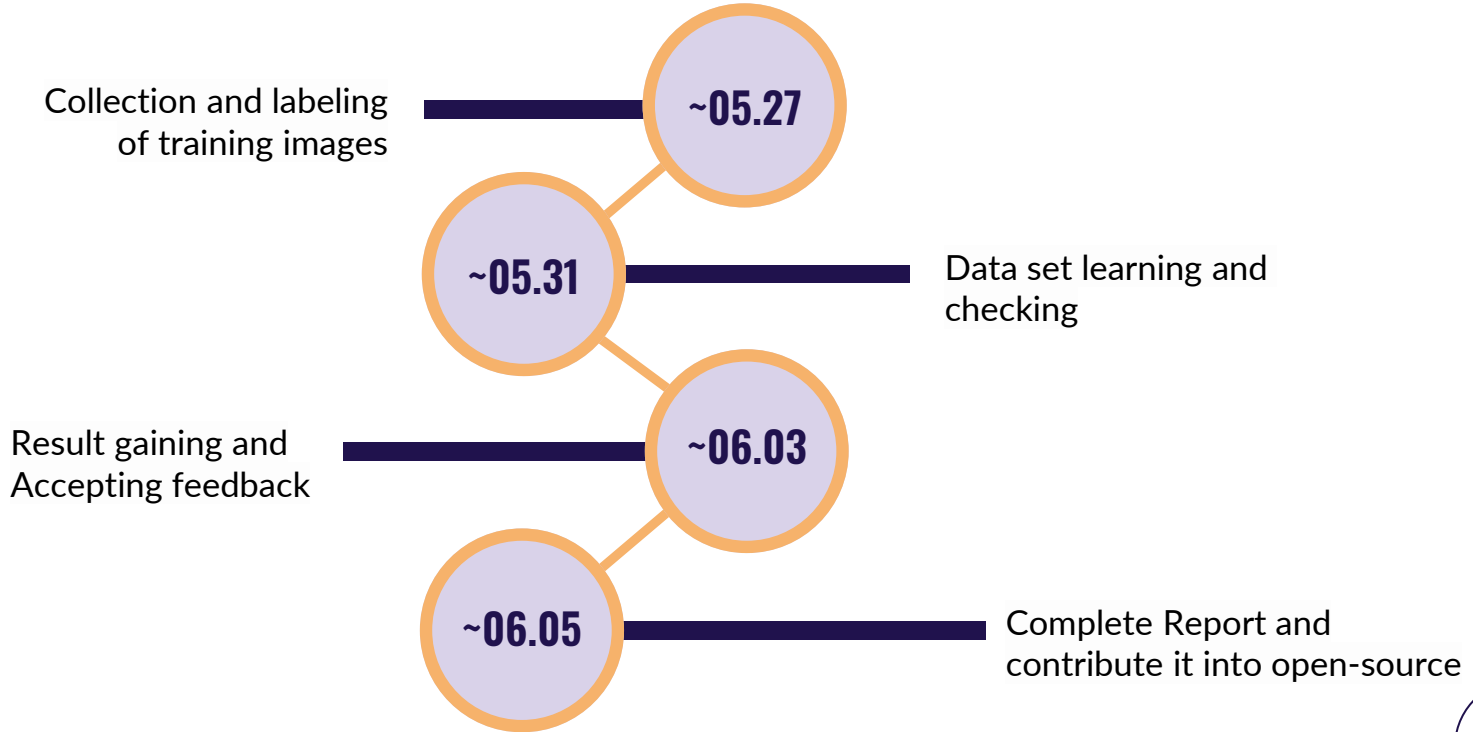
Labellmg is a graphical image annotation tool.

It is written in Python and uses Qt for its graphical interface.

Annotations are saved as XML files in PASCAL VOC format, the format used by [ImageNet](#). Besides, it also supports YOLO and CreateML formats.



Schedule (Evaluation Plan)



Team Introduction



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THANKS

Do you have any questions?

Team B -

심우석, 전강훈, 오찬희, 권순형

